

WHAT IS CLAIMED IS:

1. An in-glaze decoration raised decorative ceramic article having a raised coloring material layer obtained on in-glaze decoration on a glazing layer formed on a surface of a ceramic substrate layer, using a raised coloring material including inorganic pigment(s) and glass flux, said in-glaze coloring raised decorative ceramic article comprising:

an intermediate glass layer of glass with a glass transition temperature of 450°C to 550°C between said glazing layer and the raised coloring material layer;

said glass flux in said raised coloring material having a glass transition temperature ranging between 550°C and 700°C.

2. The in-glaze decoration raised decorative ceramic article as defined in claim 1 wherein

said raised coloring material layer has a thickness in the as-fired state ranging between 20 and 250 μ m.

3. The in-glaze decoration raised decorative ceramic article as defined in claim 1 wherein

said glass layer has a thickness in the as-fired state ranging between 0.1 and 50 μ m.

4. The in-glaze decoration raised decorative ceramic article as defined in claim 2 wherein

said glass layer has a thickness in the as-fired state

ranging between 0.1 and 50 μ m.

5. The in-glaze decoration raised decorative ceramic article as defined in claim 1 wherein

the glost firing temperature of the ceramic substrate is not lower than 1100°C .

6. The in-glaze decoration raised decorative ceramic article as defined in claim 4 wherein

the glost firing temperature of the ceramic substrate is not lower than 1100°C .

7. The in-glaze decoration raised decorative ceramic article as defined in claim 1 wherein

the glass transition temperature of said glass flux in said raised coloring material is higher by 20°C to 150°C than the glass transition temperature of said glass layer.

8. The in-glaze decoration raised decorative ceramic article as defined in claim 4 wherein

the glost firing temperature of the ceramic substrate is not lower than 1100°C .

9. The in-glaze decoration raised decorative ceramic article as defined in claim 5 wherein

the glost firing temperature of the ceramic substrate is not lower than 1100°C .

10. The in-glaze decoration raised decorative ceramic article as defined in claim 6 wherein

the glost firing temperature of the ceramic substrate is

not lower than 1100°C .

11. The ceramic article as defined in claim1, wherein said glass transition temperature of the glass flux in said raised coloring material is 570 to 680°C , preferably 600 to 660°C .

12. The ceramic article as defined in claim1, wherein said glass transition temperature of the glass in said glass layer is 470 to 530°C , preferably 490 to 520°C .

13. The ceramic article as defined in claim1, wherein said raised coloring material layer has a thickness of 50 to 200 μ m, preferably 80 to 150 μ m, after the firing.

14. The ceramic article as defined in claim1, wherein said glass flux in the raised coloring material is free of lead.

15. The ceramic article as defined in claim1, wherein said intermediate glass layer has a thickness of 0.1 to 50 μ m after firing.

16. The ceramic article as defined in claim1, wherein said intermediate glass layer has a thickness of 1 to 40 μ m, preferably 3 to 30 μ m, more preferably 5 to 20 μ m after firing.

17. The ceramic article as defined in claim1, wherein said glass transition temperature of the glass flux in said raised coloring material is by at most 100°C , preferably by at most 75°C , higher than that of the glass in said intermediate glass layer.

18. A transcription sheet for in-glaze coloring a glazed

surface of a ceramic article comprising:

at least a water-soluble adhesive layer formed on a base sheet;

a raised coloring material layer printed at a preset position and pattern on said adhesive layer, said raised coloring material layer containing an inorganic pigment(s) and a glass frit(s); and

a glass layer or layers formed between said adhesive layer and said raised coloring material layer, said glass layer or layers having a glass transition temperature between 450°C and 550°C ;

said glass flux in said raised coloring material having a glass transition temperature between 550°C and 700°C .

19. The transcription sheet as defined in claim 18, wherein said glass transition temperature of the glass flux in said raised coloring material is 570 to 680°C , preferably 600 to 660°C .

20. The transcription sheet as defined in claim 18, wherein said glass transition temperature of the glass in said glass layer is 470 to 530°C , preferably 490 to 520°C .

21. The transcription sheet as defined in claim 18, wherein said raised coloring material layer has a thickness of 50 to 200 μ m, after firing.

22. The transcription sheet as defined in claim 18, wherein said glass flux in the raised coloring material is free of lead.

23. The transcription sheet as defined in claim 18, wherein said intermediate glass layer has a thickness of 0.1 to 50 μ m after firing.

24. The transcription sheet as defined in claim 18, wherein
5 said intermediate glass layer has a thickness of 1 to 40 μ m, preferably 3 to 30 μ m, more preferably 5 to 20 μ m after firing.

25. The transcription sheet as defined in claim 18, wherein
10 said glass transition temperature of the glass flux in said raised coloring material is by at most 100°C, preferably by at most 75°C, higher than that of the glass in said intermediate glass layer.